

ANTHOCYANIN STABILITY OF ROBUSTA COFFEE CHERRIES DURING STORAGE

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Abstract

The overripe Robusta cherries had potential as a source of anthocyanin. The aim of this research was to investigate anthocyanin stability which was extracted from cherries. Anthocyanin was extracted using ethanol and aquadest with a ratio of 1:1. Extraction was repeated 3 times until the residue was colorless. After that, this extract was kept at different temperatures of 5, 25, and 45 °C for 4 weeks. The stability was evaluated by anthocyanin content and loss of anthocyanin, Hue color, pH, and antioxidant activity. The results showed that during storage, the stability of all samples decreased. The sample kept at 5 °C had the best stability with an anthocyanin content of 3.26 %, a loss of anthocyanin of 26.55 %, a Hue color of 146.12, a pH of 5.01, and an antioxidant activity of 16.26 % after 4 weeks. The least stability was obtained at the sample kept at 45 °C with an anthocyanin content of 1.30 %, a loss of anthocyanin of 29.02 %, a Hue color of 124.92, a pH of 5.03, and an antioxidant activity of 6.60 %.

Keywords : *Robusta cherries, anthocyanin stability, antioxidant activity, temperature*

Introduction

Anthocyanins mainly contribute to the bright red color of fruits, vegetables, and grains [3]. Epidemiological data associate anthocyanins with the prevention of various diseases such as visual and vascular diseases, obesity, and some cancers [18; 8; 17; 1; 13; 6].

Recently, as consumers are increasingly concerned about the safety of synthetic colorants used in food, the trend of using natural colorants in food products has also increased intensively. The potential health benefits of anthocyanins enhance consumer interest in using them in food to replace artificial red or purple colorants [12]. Anthocyanin colorants could be used in many solid foods such as extruded snacks and baked cakes as well as in drinks and beverages [11].

The degradation of anthocyanins in fruits and vegetables during processing and storage has been reported in some studies [9; 14; 11]. Those studies were carried out at a temperature below 100°C and a high moisture condition. The degradation of anthocyanins was significantly accelerated by various glycosidase activities and severe pH in the sample, besides heating temperature. Thus, the lability of anthocyanins observed in those studies could be different from that under dry heating conditions.

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